CLAIMS

I Claim:

1. A heating device within an integrated circuit, comprising:

a first conductive lead;

a second conductive lead;

a third conductive lead;

a first resistive region connected between the first conductive lead and the third conductive lead; and,

a second resistive region connected between the second conductive lead and the third conductive lead;

wherein a side formed by the first conductive lead and the first resistive region is parallel to a side formed by the second conductive lead and the second resistive region.

2. A heating device as in claim 1 wherein an insulator is placed between the side formed by the first conductive lead and the first resistive region and the side formed by the second conductive lead and the second resistive region.

3. A heating device as in claim 1 wherein an insulator is placed between the first conductive lead and the second conductive lead, and wherein a third resistive region is placed between the first resistive region and the second resistive region, and wherein resistivity of the third resistive region is higher than resistivity of the first resistive region and of the second resistive region.

4. A heating device as in claim 1:

wherein an insulator is placed between the side formed by the first conductive lead and the first resistive region and the side formed by the second conductive lead and the second resistive region, except for an area immediately adjacent to the third conductive lead where a third resistive region separates the first resistive region and the second resistive region; and,

wherein resistivity of the third resistive region is identical to resistivity of the first resistive region and of the second resistive region.

5. A heating device as in claim 1:

wherein an insulator is placed between the first conductive lead and the second conductive lead;

wherein a third resistive region is placed between the first resistive region and the second resistive region, except for an area immediately adjacent to the third conductive lead where a fourth resistive region separates the first resistive region and the second resistive region;

wherein resistivity of the third resistive region is higher than resistivity of the first resistive region and of the second resistive region; and,

wherein resistivity of the fourth resistive region is identical to resistivity of the first resistive region and of the second resistive region.

6. A heating device as in claim 1:

wherein an insulator is placed between the side formed by the first conductive lead and the first resistive region and the side formed by the second conductive lead and the second resistive region, except for a plurality of areas where third resistive regions separate the first resistive region and the second resistive region; and,

wherein resistivity of the third resistive regions is identical to resistivity of the first resistive region and of the second resistive region.

7. A heating device as in claim 1:

wherein an insulator is placed between the side formed by the first conductive lead and the first resistive region and the side formed by the second conductive lead and the second resistive region, except for a plurality of areas where third resistive regions separate the first resistive region and the second resistive region; and,

wherein resistivity of the third resistive regions is higher than resistivity of the first resistive region and of the second resistive region.

8. A heating device as in claim 1 wherein the integrated circuit is connected to a planar light circuit.

9. A heating device as in claim 1 wherein the integrated circuit is used within an inkjet printhead.

10. A heating device comprising:

a first region formed from bottom layer of resistive material;

a second region and a third region formed from the middle layer of resistive material; and,

fourth region and a fifth region formed from a top layer of conductive material;

wherein the second region is located between the first region and the second region;

wherein third region is located between the first region and the third region; and,

wherein the first region has a higher resistivity than the second region and than the third region.

11. A heating device as in claim 10 wherein:

the top layer comprises aluminum;

the middle layer comprises tantalum aluminum; and,

the bottom layer comprises WSi3N4.

12. A heating device as in claim 10 wherein the heating device is within a total internal reflection switching element used in an optical cross-connection switch.

13. A heating device as in claim 10 wherein the heating device is within an inkjet printhead.

14. A heating device within an integrated circuit, comprising:

a first conductive lead;

a second conductive lead;

a third conductive lead;

a fourth conductive lead;

a first resistive region connected between the first conductive lead and the third conductive lead; and,

a second resistive region connected between the second conductive lead and the fourth conductive lead;

wherein a side formed by the first conductive lead, the first resistive region and the third conductive lead is parallel to a side formed by the second conductive lead, the second resistive region and the fourth conductive lead.

15. A heating device as in claim 14 wherein an insulator is placed between the side formed by first conductive lead, the first resistive region and the third conductive lead and the side formed by the second conductive lead, the second resistive region and the fourth conductive lead.

16. A heating device as in claim 14:

wherein a third resistive region is placed between the first resistive region and the second resistive region; and,

wherein resistivity of the third resistive region is higher than resistivity of the first resistive region and of the second resistive region.

17. A heating device as in claim 14 wherein the heating device is within a total internal reflection switching element used in an optical cross-connection switch.

18. A heating device as in claim 14 wherein the heating device is within an inkjet printhead.

19. A heating device as in claim 14 wherein the heating device is placed on a structure that defines a bore hole exit for an inkjet printhead.

20. A heating device as in claim 14 wherein the heating device is arranged as part of a tube design for an inkjet printhead.